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| EXAMINER | |
|---|---|
| BERMAN, SUSAN W | |

| ART UNIT | PAPER NUMBER |
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| 1796 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/524,828 | HUSEMANN ET AL. | |
| | Examiner | Art Unit | |
| | /Susan W. Berman/ | 1796 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *17 September 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *5-13 and 17-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *5-13 and 17-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 February 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

### *Response to Amendment*

The rejection of claims 1-17 under 35 U.S.C. 112, first paragraph, is overcome.

The rejection of claims 1-4 and 13-16 under 35 U.S.C. 112, second paragraph, is moot.

### *Response to Arguments*

Applicant's arguments filed 09-17-2008 have been fully considered.

The anticipation rejections have been rewritten herein below to reflect the requirements of the amended claims.

The rejection of claims over Massow et al in view of Birbaum et al is withdrawn for the following reasons. Applicant argues that the office action does not point out coating the composition onto a backing and subsequent thermal crosslinking. Massow et al disclose a process for preparation of acrylic hot melt adhesives by irradiation on a substrate. Coating on a backing is taught in column 5, line 67, to column 6, line 26. However, It is agreed that Massow et al do not teach thermal crosslinking after irradiation. Although irradiation produces heat energy which would be expected to cause thermal crosslinking in the presence of a base catalyst and groups crosslinkable by base catalysis, Massow et al do not teach compositions comprising a base, whether photogenerated or not. Birnbaum et al disclose photogeneration of amines from α-aminoacetophenones to photochemically provide base catalysts in base crosslinking compositions. The disclosure of Birbaum et al is relied upon for teaching irradiation followed by thermal crosslinking. However, upon reconsideration, there does not appear to be motivation to introduce a base and base-catalyzed thermal crosslinking taught by Birbaum et al into the disclosure of Massow et al.

New grounds of rejection over Birbaum et al in view of Kunimoto et al or Heilmann et al are set ofrth herein below.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear whether applicant intend to claim a composite of a psa tape and a strip or to claim psa tapes or psa strips as alternative products.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13 and 18-21 are rejected under 35 U.S.C. 102(b) as being anticipated by or, alternatively, as unpatentable over Kunimoto et al (US 2001/0012596). Kunimoto et al disclose oxime ester photoinitiators having thermal stability and storage stability properties in photopolymerization processes. See paragraphs [0004] and [0149] to [0152]. Polymers having a carboxyl functional group are taught in paragraph [0200]. Example 72 teaches a composition comprising a copolymer of benzylmethacrylate and methacrylic acid and an oxime ester

photoinitiator. Kunimoto et al teach that the disclosed photopolymerizable compositions are useful as adhesives or pressure-sensitive adhesives in paragraph [0248], [03666]. Applications using the adhesives for bonding components in photolithography, for example, are taught. Process steps corresponding to those set forth in instant claim 5, i.e., coating a substrate, irradiation and thermal treatment are disclosed by Kunimoto et al [0368] to [0375]. The oxime ester photoinitiators disclosed by Kunimoto et al correspond to the photobase generators taught in the instant specification for generating a base that crosslinks an acrylic polymer having functional groups reactive with the base. Thus the process steps reciting irradiation to photochemically generate a base and cause thermal crosslinking by reaction of the base with a reactive group such as an acid group set forth in instant claim 5 would appear to be inherent to the method disclosed by Kunimoto et al. Kunimoto et al teach use of known coating techniques but do not specifically mention hotmelt coating, which is a well known process for applying adhesive compositions. The adhesive product obtained by the method disclosed by Kunimoto et al would be expected to have the same properties as the adhesive products instantly claimed, in the absence of evidence to the contrary because Kunimoto et al disclose the same and/or analogous ethylenically unsaturated monomers and teach coating and photopolymerization in the presence of an oxime ester photoinitiator that would be expected to generate a base and to cause crosslinking during a thermal treatment following photopolymerization. Kunimoto et al do not mention the % by weight limitations set forth in instant claim 5 which is incorporated into claims 13 and 18-21. However, because Kunimoto et al do not limit the weight percents and the amounts used in the examples are within the instantly claimed ranges, the instantly recited weight percents are considered to be inherent to the disclosure of Kunimoto et al.

Claims 13 and 18-21 are rejected under 35 U.S.C. 102(b) as being unpatentable over Heilmann et al (6,635,690). Heilmann et al disclose melt processable reactive oligomers useful for pressure sensitive adhesives. The first acrylic oligomer contains nucleophilic or elctrophilic groups, such as introduced by an oxime ester, and the second acrylic oligomer contains co-reactive groups. Heilmann et al disclose % by weight of monomers limitations encompassing those set forth in instant claim 5, which is incorporated into claims 13 and 18-21. See column 5, lines 3-55. Co-reactive groups, including hydroxyl, carboxyl and isocyanate groups, in the second oligomer are disclosed in column 6, lines 27-33. Examples 45, 47 and 49 disclose a method for copolymerizing acrylate monomers with a methacrylate-functional ketoxime ester by exposure to UV radiation in the presence of a photoinitiator, providing an oliogmer having oxime ester groups. Heilmann et al teach that the oligomeric products obtained by photopolymerization did not gel and were flexible (column 14, lines 44-67, and column 25, lines 13-25). Examples 50-52 disclose thermal crosslinking of coating compositions comprising the oxime ester functional oligomers and a second copolymer comprising functional groups co-reactive with the oxime ester groups ( such as hydroxyl groups) prepared in Examples 46 and 47.

Thus, process steps corresponding to those set forth in instant claim 5, i.e., incorporation of an oxime ester by copolymerization with acrylic monomers, coating a substrate, irradiation and thermal treatment are disclosed by Heilmann et al in the Examples. Heilmann et al teach that the coating compositions are melt processable. The polymerizable oxime ester photoinitiators disclosed by Heilmann et al correspond to the photobase generators taught in the instant specification for generating a base that crosslinks an acrylic polymer having functional groups

reactive with the base. Thus the process steps reciting irradiation to photochemically generate a base and cause thermal crosslinking by reaction of the base with a reactive group such as an acid group set forth in instant claim 5 would appear to be inherent to the method disclosed by Heilmann et al. The adhesive product obtained by the method disclosed by Heilmann et al would be expected to have the same properties as the adhesive products instantly claimed, in the absence of evidence to the contrary, because Heilmann et al disclose the same and/or analogous ethylenically unsaturated monomers and teach coating and photopolymerization in the presence of an oxime ester photoinitiator that would be expected to generate a base and to cause crosslinking during the thermal crosslinking of the composition comprising a second oligomer having co-reactive groups.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5-13 and 17-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Birbaum et al (6,057,380) in view of Kunimoto et al (US 2001/0012596) or Heilmann et al (6,635,690).

Birbaum et al disclose a process for photogeneration of amines from α-aminoacetophenones to photochemically provide base catalysts in base crosslinking compositions and heating the composition during or after irradiation to accelerate crosslinking

(column 17, line 34, to column 18, line 67). Polymeric acids, copolymers of unsaturated compounds with or without acid functions and copolymers containing acid and epoxide groups are specifically mentioned among organic compounds capable of reacting in a base-catalyzed reaction (column 10, lines 46-53, and column 11, lines 8-51). Birnbaum et al teach using an amount of 0.1 to 20 % by weight of photobase generator. See column 9, line 60, to column 10, line 62. Birbaum et al further teach that the α-aminoacetophenones generate a radical initiator in addition to the base catalyst so can be used where dual curing is desired (column 12, lines 10-16). Use in photopolymerizable pressure sensitive adhesives is taught in column 20, line 51. Coating methods are taught in column 21, lines 13-38. Birbaum et al teach use of known coating techniques but do not specifically mention hotmelt coating, which is a well known process for applying adhesive compositions.

The disclosure of Kunimoto et al is discussed herein above. The instant process steps reciting irradiation to photochemically generate a base and cause thermal crosslinking by reaction of the base with a reactive group such as an acid group set forth in instant claim 5 would appear to be inherent to the method disclosed by Kunimoto et al. Kunimoto et al teach use of known coating techniques but do not specifically mention hotmelt coating, which is a well known process for applying adhesive compositions. Kunimoto et al do not specifically teach hotmelt coating or mention that the oxime esters disclosed will generate a base when exposed to irradiation and that the base generated will react with reactive groups to crosslink the disclosed compositions.

The disclosure of Heilmann et al is discussed herein above. Heilmann et al disclose a method for copolymerizing acrylate monomers with a methacrylate-functional ketoxime ester by

exposure to UV radiation in the presence of a photoinitiator, providing an oliogmer having oxime ester groups. Examples 50-52 of Heilmann et al disclose thermal crosslinking of coating compositions comprising the oxime ester functional oligomers and a second copolymer comprising functional groups co-reactive with the oxime ester groups ( such as hydroxyl groups) prepared in Examples 46 and 47. Heilmann et al do not specifically teach hotmelt coating or mention that the oxime esters disclosed will generate a base when exposed to irradiation and that the base generated will react with reactive groups to crosslink the disclosed compositions.

With respect to method claims 5-12 and 17: It would have been obvious to one skilled in the art at the time of the invention to employ the compositions comprising oxime ester photoinitiators taught by Kunimoto et al or acrylic polymers containing copolymerized oxime ester groups taught by Heilmann et al in the method comprising photogeneration of a base and subsequent base crosslinking reactions, as taught by Birbaum et al. The references are considered to be analogous art because each teaches acrylic adhesives, exposure to irradiation and in the process comprising solvent removal, hot melt coating and irradiation taught by Massow et al. Massow et al provide motivation by teaching that irradiation is employed to crosslink the adhesive composition. Birnbaum et al provide motivation by teaching that the α-aminoacetophenones generate a base upon irradiation that enhances crosslinking of analogous polyacrylics. One skilled in the art at the time of the invention would have been motivated by a reasonable expectation of enhancing crosslinking of the polyacrylic adhesive composition applied by a hotmelt process and crosslinked by irradiation disclosed by Massow et al, as taught by Birnbaum et al.

With respect to product by process claims 13 and 18-21: It would have been obvious to one skilled in the art at the time of the invention to obtain pressure sensitive adhesives by combining the method steps taught by Birbaum et al with those taught by Kunimoto et al or Heilmann et al for the reasons set forth above. Birbaum et al provide motivation to prepare a pressure sensitive adhesive by teaching that the disclosed compositions are useful as adhesives. Additional motivation is provided by the teaching that the compositions comprising photobase generating materials are thermally stable compositions that are thermally crosslinkable after irradiation. Kunimoto et al provide motivation by teaching that compositions comprising acrylic polymers and oxime ester photoinitiators are useful for providing adhesives. Heilmann et al provide motivation by teaching that compositions comprising acrylic polymers having oxime ester functional groups are useful for providing adhesives. One skilled in the art at the time of the invention would have been motivated by a reasonable expectation of providing useful pressure sensitive adhesives using the compositions taught by Kunimoto ert al or Heilmann et al in combination with the method steps taught by Birbaum et al in analogous art.

## *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Susan W. Berman/ whose telephone number is 571 272 1067. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571 272 1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SB
11/19/2008

/Susan W Berman/
Primary Examiner
Art Unit 1796